

A modified cavity slide for temporary preparation and illustration of insect genitalia in glycerin

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The taxonomy of most groups of insects is largely dependent on genitalic characters, which can be extremely complex, even asymmetric (Huber *et al.* 2007). The study of small, complex insect terminalia, then, often requires microscopic examination of this structure in more than one view, using temporary slide mounting. The temporary mounting generally consists of the placement of the structure in a cavity slide filled with glycerin or glycerin jelly with a cover slide. The preparation in glycerin may be faster than in glycerin jelly if the problem of stabilizing the structure in the correct position can be overcome.

Using glycerin jelly facilitates structure stabilization, but demands more time of preparation (heating and cooling processes) and is more susceptible to bubbles (Kiernan 1997). In spite of its wide acceptance, the need of a heating apparatus and a procedure for maintaining the required temperature during preparation causes some authors to consider glycerin jelly the most difficult medium to use in slide preparation (Kiernan 1997). In addition, once a structure is prepared in glycerin jelly, it may retain residues if transferred to other media. The remnant glycerin jelly surrounding the structure can be advantageous conferring protection for it, but also an undesired barrier if preparations or dissections in other media have to be made. Alternatively, some authors have been using hand sanitizer gel as a mounting medium to help stabilization (Fleming *et al.* 2014).

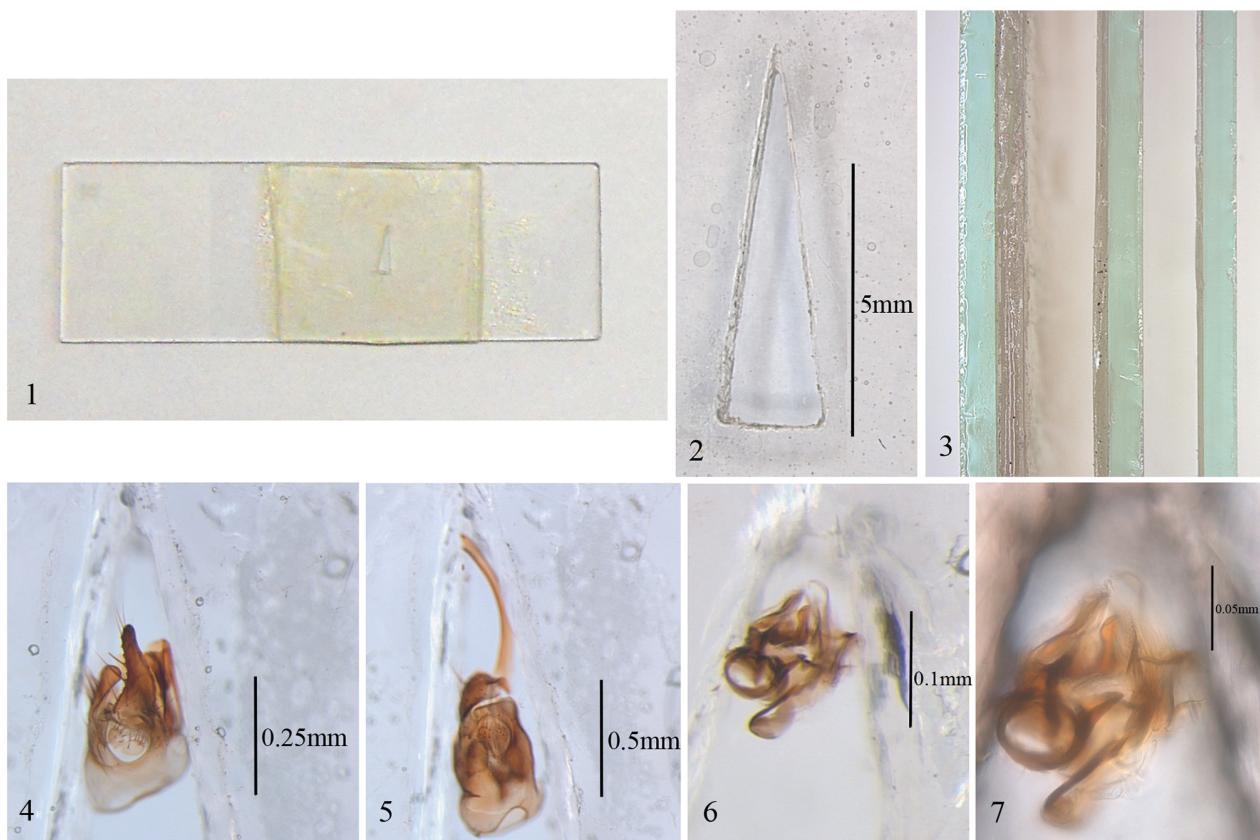
The cavity slide described in this paper (Figs 1 and 2) is proposed as an alternative for workers who prefer to use glycerin in slide preparations, but demand greater stabilization than the medium normally provides. This modified slide facilitates the rapid stabilization of the genitalia in this medium, allowing fast slide preparations.

The material necessary to make the slide is a clear, thin PVC plastic sheet, one regular slide, triangle point punch (used for cutting triangles for point mounting insects) and epoxy. The slide montage is simple: cut a triangular hole in the middle of the plastic sheet with the point punch, glue the sheet to the slide and wait for the epoxy to dry. To prepare for examination under the microscope, fill the cavity with glycerin and position the structure in a way that the triangle walls prop up the structure in the desired view, and cover with a cover slide. A deeper cavity for larger structures can be made by two or more plastic sheets glued to each other (Fig. 3).

This special cavity slide has been used to make illustrations for recent taxonomic revisions (Ament & Amorim 2010; Ament 2012) and some examples of preparations are shown in Figures 4–7. The slide can be used even under the 100x objective lens of most scopes, but the walls of the triangle may present an undesired optical interference in the visualization of the lateral edge of the structure. This loss of visualization may be circumvented by propping specimens in different directions in the triangular vertex or with the preparation and study of different views.

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FIGURES 1–7. Modified cavity slide proposed for structure stabilization in glycerin. 1, Entire slide; 2, Triangular cavity; 3, Lateral view of slides with different heights (different depths of the cavity); 4, Hypopygium of *Neopleurophora kungi* Ament & Amorim in cavity slide; 5, Hypopygium of *Neopleurophora dolichopyga* Ament & Amorim in cavity slide; 6, Phallus of *Coniceromyia epicantha* Borgmeier in cavity slide; 7, Phallus of *Coniceromyia epicantha* in cavity slide under 40x objective lens.

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